



Form 1449 (Modified)	Atty Docket No. NOVLP089/ NVLS-2887	Application No.: 10/800,377
Information Disclosure Statement By Applicant	Applicant: Cho et al.	
(Use Several Sheets if Necessary)	Filing Date March 11, 2004	Group 2812

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
W	A1	6,500,770 B1	12.2002	Cheng et al.			
W	A2	2002/0192980 A1	12.2002	Hogle et al.			

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
W	C1	U.S. Office Action mailed July 13, 2005, from U.S Application No. 10/672,311 [Atty Dkt No. NOVLP075/NVLS-000820].
W	C2	U.S. Office Action mailed July 27, 2005, from U.S Application No. 10/785,235 [Atty Dkt No. NOVLP085/NVLS-2875].
Examiner <i>H. P. ...</i>		Date Considered <i>3/9/06</i>

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	<table style="width: 100%;"> <tr> <td style="width: 50%;"> Atty Docket No. NOVLP089/ NVLS-2887 </td> <td style="width: 50%;"> Application No.: 10/800,377 </td> </tr> <tr> <td colspan="2"> Applicant: Cho et al. </td> </tr> <tr> <td> Filing Date March 11, 2004 </td> <td> Group 2812 </td> </tr> </table>	Atty Docket No. NOVLP089/ NVLS-2887	Application No.: 10/800,377	Applicant: Cho et al.		Filing Date March 11, 2004	Group 2812
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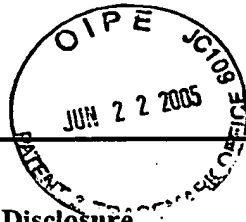
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Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
W	C1	Cho et al., "Method for Porogen Removal and Mechanical Strength Enhancement of Low-K Carbon Doped Silicon Oxide Using Low Thermal Budget Microwave Curing", U.S. Application No. 11/280,113, filed November 15, 2005 (Atty Dkt: NOVLP145/NVLS-3106)
Examiner	<div style="display: flex; justify-content: space-between;"> R. P. Jung Date Considered 3/2/06 </div>	

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	A2	5,789,027	08.04.98	Watkins et al.			
	A3	6,391,932 B1	05.21.02	Gore et al.			
	A4	5,700,844	12.23.97	Hedrick et al.			
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub- class	Translation	
							Yes	No
WP	B1	WO95/07543	03.16.95	WIPO			X	

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Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
WP	C1	Jan, C.H., et al, <i>90NM Generation, 300mm Wafer Low k ILD/Cu Interconnect Technology</i> , 2003 IEEE Interconnect Technology Conference.
	C2	Wu et al., U.S. Application No. 10/789,103 (Atty Docket No.: NOVLP094), entitled: Methods For Producing Low-K CDO Films With Low Residual Stress
	C3	Wu et al., U.S. Application No. 10/820,525 (Atty Docket No.: NOVLP091), entitled: Methods For Producing Low-K CDO Films With Low Residual Stress
	C4	Wu et al., U.S. Application No. 10/800,409 (Atty Docket No.: NOVLP098), entitled: Methods For Producing Low-K CDO Films
	C5	U.S. Patent Application No. 10/016,017, File Date: December 12, 2001 (Atty Dkt: NOVLP030)
	C6	U.S. Patent Application No. 10/125,614, File Date: April 18, 2002 (Atty Dkt: NOVLP028)
	C7	U.S. Patent Application No. 10/202,987, File Date: July 23, 2002 (Atty Dkt: NOVLP028X1)
	C8	Tipton et al., "Method for Removal of Porogens From Porous Low-K Films Using Supercritical Fluids", Novellus Systems, Inc., Application No. 10/672,305, filed 9/26/03, pages 1-32. Atty. Docket No. NOVLP069/NVLS-000821
	C9	Humayun et al., "Method For Forming Porous Films By Porogen Removal Combined With In Situ Modification", U.S. Patent No. 10/404,693, filed March 31, 2003, Office Action dated March 15, 2005 (Atty Dkt: NOVLP064)
	C10	Tipton et al., "Method Of Porogen Removal From Porous Low-K Films Using UV Radiation", U.S. Application No. 10/672,311, filed September 26, 2003, Office Action dated September 7, 2004 (Atty Dkt: NOVLP075/NVLS-000820)
WP	C11	Tipton et al., "Method Of Porogen Removal From Porous Low-K Films Using UV Radiation", U.S. Application No. 10/672,311, filed September 26, 2003, Office Action dated December 28, 2004 (Atty Dkt: NOVLP075/NVLS-000820)
Examiner <i>WP. Lander</i>		Date Considered <i>3/4/06</i>

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<i>W</i>	C12	Tipton et al., "Method For Removal Of Porogens From Porous Low-K Films Using Supercritical Fluids", U.S. Patent No. 10/672,305, Office Action dated March 22, 2005 (Atty Dkt: NOVLP069).
	C13	R.D. Miller et al., "Phase-Separated Inorganic-Organic Hybrids for Microelectronic Applications," MRS Bulletin, October 1997, Pages 44-48
	C14	Jin et al., "Nanoporous Silica as an Ultralow- <i>k</i> Dielectric," MRS Bulletin, October 1997, Pages 39-42
	C15	Asoh et al., "Fabrication of Ideally Ordered Anodic Porous Alumina with 63 nm Hole Periodicity Using Sulfuric Acid," J. Vac. Sci. Technol. B 19(2), Mar/Apr 2001, Pages 569-572
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	C19	Clube et al., "White Paper from Holotronic Technologies SA; downloaded from www.hdotronic.com/whitepaper/fine-patt.pdf on March 12, 2002
	C20	Meli et al., "Self-Assembled Masks for the Transfer of Nanometer-Scale Patterns into Surfaces: Characterization by AFM and LFM", Nano Letters, Vol. 2, No. 2, 2002, 131-135
	C21	"Shipley Claims Porous Low K Dielectric Breakthrough," Press Release March 17, 2003.
	C22	Jeffrey M. Calvert and Michael K. Gallagher, Semiconductor International, 26 (12), 56 (2003).
	C23	Van Bavel et al., Future Fab International, 16, (2004).
	C24	Caluwaerts et al, "Post Patterning Meso Porosity Creation: A Potential Solution For Pore Sealing," IITC 2003.
	C25	Peter Singer, "New Materials and Designs to Improve Transistor Performance", April 1, 2004, Semiconductor International.
	C26	Ghani et al, "A 90nm High Volume Manufacturing Logic Technology Featuring Novel 45nm Gate Length Strained Silicon CMOS Transistors", IEEE, © 2003.
<i>W</i>	C27	Bhadri N. Varadarajan, "Tensile Silicon Nitride - P1264 NESL", C & F Study, August 21, 2003.
Examiner	<i>HP/KAR</i>	Date Considered <i>3/3/06</i>

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ZP	C28	Varadarajan, et al., "Strained Transistor Architecture and Method", Novellus Systems, Inc., Appln No. 10/923,259, filed August 20, 2004, pages 1-24. [Atty Docket No. NOVLP108/NVLS-2933].
	C29	Niu et al., "Methods For Improving The Cracking Resistance Of Low-K Dielectric Materials", U.S. Application No. 10/860,340, filed June 2, 2004, (Atty Dkt: NOVLP099)
	C30	Niu et al., "Methods For Improving The Cracking Resistance Of Low-K Dielectric Materials", U.S. Application No. 10/860,340, Office Action dated March 2, 2005, (Atty Dkt: NOVLP099)
	C31	Niu et al., "Methods For Improving The Cracking Resistance Of Low-K Dielectric Materials", U.S. Application No. 10/860,340, Final Office Action dated June 13, 2005, (Atty Dkt: NOVLP099)
	C32	Wang et al., "Plasma Detemplating And Silanol Capping Of Porous Dielectric Films", U.S. Application No. 10/785,235, filed February 23, 2004 (Atty Dkt: NOVLP085)
	C33	Varadarajan et al., "Tensile Dielectric Films Using UV Curing", U.S. Application No. 10/972,084, filed October 22, 2004 (Atty Dkt: NOVLP122)
	C34	Fox et al., "Method For Improving Mechanical Properties Of Low Dielectric Constant Materials", U.S. Application No. 10/849,568, filed May 18, 2004 (Atty Dkt: NOVLP083)
	C35	Fox et al., "Methods For Producing Low-Stress Carbon-Doped Oxide Films With Improved Integration Properties", U.S. Application No. 10/987,208, filed November 12, 2004 (Atty Dkt: NOVLP104)
	C36	Van Den Hoek et al., "VLSI Fabrication Processes For Introducing Pores Into Dielectric Materials," U.S. Application No. 11/050,621, filed January 31, 2005 (Atty Dkt: NOVLP100)
	C37	Draeger et al., "Creation Of Porosity In Low-K Films By Photo-Disassociation Of Imbedded Nanoparticles," U.S. Application No. 11/146,456, filed June 6, 2005 (Atty Dkt: NOVLP100X1)
	C38	Wu et al., "Methods For Producing Low Stress Porous Low-K Dielectric Materials Using Precursors With Organic Functional Groups", U.S. Application No. 10/927,777, filed August 27, 2004 (Atty Dkt: NOVLP106)
ZP	C39	Wu et al., "Methods For Improving Integration Performance Of Low Stress CDO Films", U.S. Application No. 10/941,502, filed September 14, 2004 (Atty Dkt: NOVLP107)
Examiner <i>[Signature]</i>		Date Considered <i>3/12/06</i>

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	March 11, 2004	2812

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Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
31	C40	Cho et al., "Methods of Improving Porogen Removal and Film Mechanical Strength in Producing Ultra Low-K Carbon Doped Oxide Films Using Radical Photopolymerization", U.S. Application No. 10/982,654, filed November 5, 2004 (Atty Dkt: NOVLP115)
Examiner	W. Canan	Date Considered 3/14/06

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W	A1	6,329,017	12/11/01	Liu et al.			10/04/99
	A2	6,383,466	5/7/02	Domansky et al.			12/28/98
	A3	6,365,266	4/2/02	MacDougall et al.			03/03/00
	A4	5,504,042	4/2/96	Cho et al.			06/23/94
	A5	5,858,457	1/12/96	Brinker et al.			09/25/97
	A6	6,270,846	8/7/01	Brinker et al.			03/02/00
	A7	6,387,453	5/14/02	Brinker et al.			03/02/00
	A8	6,420,441	10/10/99	Allen et al.			12/10/99
	A9	6,271,273	10/10/00	You et al.			10/10/00
	A10	20040096672	05/20/04	Lukas et al.			11/14/02
	A11	6,444,715	09/03/02	Mukherjee, et al.			06/06/00

Other Documents

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W	A12	Humayun et al., "Method For Forming Porous Films By Porogen Removal Combined With In Situ Surface Modification", U.S. Application No. 10/404,693, filed March 31, 2003
	A13	Bandyopadhyay et al., "Method to Improve Mechanical Strength of Low-K Dielectric Film Using Modulated UV Exposure", U.S. Patent Application No. 10/825,888, filed April 16, 2004
	A14	Wu et al., "Methods Of Porogen Removal For Porous Low Dielectric Constant Films Using Plasma Treatments", U.S. Patent Application No. 10/807,680, filed March 23, 2004
W	A15	Tipton et al., "Method Of Porogen Removal From Porous Low-K Films Using Uv Radiation", U.S. Patent Application No. 10/672,311, filed September 26, 2003
Examiner <i>H. Huang</i>		Date Considered <i>3/4/06</i>

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2P	B1	6,420,441	10/10/99	Allen et al.			12/10/99
	B2	6,271,273	10/10/00	You et al.			10/10/00
	B3	4,885,262	12/5/89	Ting et al.			03/08/89
	B4	5,686,054	11/11/97	Barthel et al.			05/16/95
	B5	5,851,715	12/22/98	Barthel et al.			06/18/97
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2P	B14	Cho et al., "Plasma Treatments of Molecularly Templated Nanoporous Silica Films," Electrochemical and Solid-State Letters, 4 (4) G35-G38 (2001)
2P	B15	Yung et al., "Spin-on Mesoporous Silica Films with Ultralow Dielectric Constants, Ordered Pore Structures, and Hydrophobic Surfaces," Adv. Mater. 2001, 13, No. 14, 1099-1102
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W. J. Canale	3/11/06	

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28	C1	Schulberg et al., "System for Deposition of Mesoporous Materials," U.S. Patent Application No. 10/295,965, filed November 15, 2002, 64 Pages
31	C2	Watkins et al., "Mesoporous Materials and Methods," U.S. Patent Application No.10/301,013, filed November 21, 2002, 34 Pages
20	C3	Gangpadhyay et al., "The First International Surface Cleaning Workshop," Northeastern University, November 11-14, 2002
20	C4	Justin F. Gaynor, "In-Situ Treatment of Low-K Films With a Silylating Agent After Exposure To Oxidizing Environments," U.S. Patent Application No.10/056,926 filed January 24, 2002, 34 Pages
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K. R. [Signature]		3/16/06

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	A1						

Foreign Patent or Published Foreign Patent Application

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							Yes	No
	B1							

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<i>W</i>	C1	Tipton et al., "Method For Removal Of Porogens From Porous Low-K Films Using Supercritical Fluids", U.S. Patent No. 10/672,305, filed Sept 26, 2003, Office Action dated September 1, 2005 (Atty Dkt: NOVLP069).
<i>W</i>	C2	Humayun et al., "Method For Forming Porous Films By Porogen Removal Combined With In Situ Modification", U.S. Patent No. 10/404,693, filed March 31, 2003, Office Action dated August 24, 2005 (Atty Dkt: NOVLP064)
Examiner <i>KPILUPAT</i>		Date Considered <i>3/16/06</i>

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